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TWO NEW TERRESTRIAL ISOPODA (ONISCIDEA) FROM CORALLINE CAYS OF VENEZUELA'S CARIBBEAN COAST

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Abstract.—Two terrestrial, halophilous isopods, ***Metastenoniscus neotropicalis*** **n. sp.** (Stenoniscidae) and ***Armadilloniscus caraibicus*** **n. sp.** (Scyphacidae) are described from coralline cays of Venezuela's Caribbean coast. *Buchnerillo litoralis* Verh. and *Stenoniscus pleonalis* Aubert and Dollfus are reported from the Caribbean region.

Key Words: Isopoda, Oniscidea, Neotropical, Caribbean, *Metastenoniscus neotropicalis* n. sp., *Armadilloniscus caraibicus* n. sp., *Buchnerillo litoralis, Stenoniscus pleonalis*

Knowledge of the Venezuelan terrestrial isopoda fauna is reported in a few post-worldwar papers: Brian 1957, Vandel 1952, 1968, 1972, Andersson 1960, Mulaik 1960, Strinati 1971, Schultz 1971, 1983, 1984, following the classic studies of Van Name 1936, 1940, 1942. We have followed in general the terminology proposed by Holdich 1984, Holdich et al. 1984. Our work is mostly based on SEM (Scanning Electron Microscopy).

The two new species that we describe belong to the halophilous seacoast fauna. The tergites covered by longitudinal ribs suggest that these species belong to the eco-morphological category of *creepers* (Schmalfuss 1984, Paoletti 1987).

ONISCOIDEA

Stenoniscidae

Metastenoniscus neotropicalis n. sp.

Type locality. Coralline key (Cayo) of Playuela, Parque Morrocoy, estado Falcon, Venezuela. 28 females and 12 males were collected in soil litter of *Coccolobis uvifera* (L) Jacq. (Polygonaceae), by M. G. Paoletti on January 1, 1986 (Paoletti 1988).

Male holotype, allotype and paratypes are located in the M. G. Paoletti collection; 3 female paratypes are deposited in the Museo Zoologico of the Padova University; 3 female paratypes are located in the general-collection of Instituto Museo de Zoologia Agricola, Universitad Central de Venezuela, Maracay, Aragua, Venezuela.

Diagnosis. This new species is similar to *Metastenoniscus osellai* Taiti and Ferrara, 1981. The smaller body is more cylindrical and holds less enlarged epimera. The telson is shorter and three-lobed.

Dimensions: length males: 1.4–1.86 mm, mean 1.57 mm; width males: 0.42–0.56 mm, mean 0.50; length females: 1.48–2.42 mm, mean 2.14 mm; width females: 0.48–0.84 mm, mean 0.71 mm (Figs. 1, 2).

Body ornamentation: consists mainly of subcircular plaques (Figs. 4A, C, D); body shape subparallel, costulated, light violet colored; pereonites I–IV without medial rib (Figs. 3A, C).

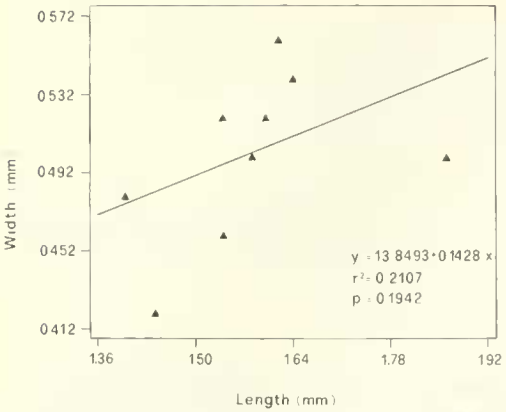

Fig. 1. Regression for male dimensions of *Metastenoniscus* neotropicalis n. sp.

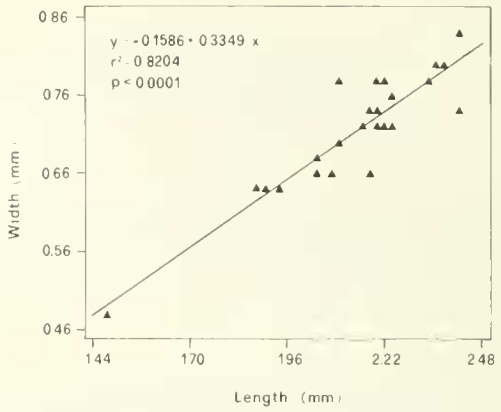

Fig. 2. Regression on female dimensions of *Metastenoniscus neotropicalis* n. sp.

Head: with three posterior main tubercles and two median main tubercles (Figs. 3A, B, C); eye with 3–4 ommatidia; antenna with flagellum consisting of two articles; the second article bears on its foreword-facing surface three aesthetascs (Figs. 3E, F). Antennule two-articulated with three apical aesthetascs, the exterior occasionally broken at the base (fig. 4E).

Telson: short and distinctly three-lobed (Figs. 3C, D; 4B, D).

Uropods: the basis is longer than wide (Fig. 4B), the exopod bears distally a spike of 4–5 aesthetascs (Figs. 4D, F); the endopod much longer than exopod (Figs. 4C, D), thickened in the middle, end with a spike of three elements (Fig. 4C).

Pleopods: male endopod of first and second pair are little differentiated (Fig. 5).

Affinities. *M. neotropicalis* n. sp. is distinct from *Metastenoniscus osellai* Taiti and Ferrara, 1981, described from Bali by the following features:

1. females and males are smaller;
2. epimeral appendages less developed and body smaller;
3. head with a different arrangement of tubercles especially in the posterior part: five on *M. osellai* and three on *M. neotropicalis* n. sp.;
4. pereonites I and II with only a hind vestige of medial rib; in *M. osellai* the pereonite from 1 to 4 has medial costa well developed (Taiti and Ferrara 1981 Figs. 1C and 2C);
5. telson shorter and distinctly three-lobed;
6. uropod exopods shorter and with wider basis.

Habitat. Found under *Coccolobis uvifera* (L.) Jacq. (Polygonaceae) (uva de plaja) litter, eating decayed litter tissue (Paoletti 1987 Figs. 7D, G, H). This isopod was not yet found in the intertidal zone but strictly in the interior part of the coralline cays and above the upper tidal level.

Distribution. Discovery of *M. neotropicalis* n. sp. considerably enlarges the known geographic range of the family Stenoniscidae. In fact *Metastenoniscus* is now represented not only in the Oriental region (Bali and the Andaman Islands) but also in a Pantropical belt including the Caribbean region. That they only now have been discovered in the Caribbean region is probably due to their small size.

Discussion. *Stenoniscus pleonalis* Aubert and Dollfus, 1890 (sensu Vandel 1962) is easily distinguishable from *Metastenoniscus osellai* (Taiti and Ferrara, 1981) and from *M. neotropicalis* n. sp. It was reported only rarely beyond the Mediterranean region and in the Neotropical region only twice (Vandel 1968, Schultz 1972). We collected *Stenoniscus pleonalis* Aubert and Dollfus (sensu

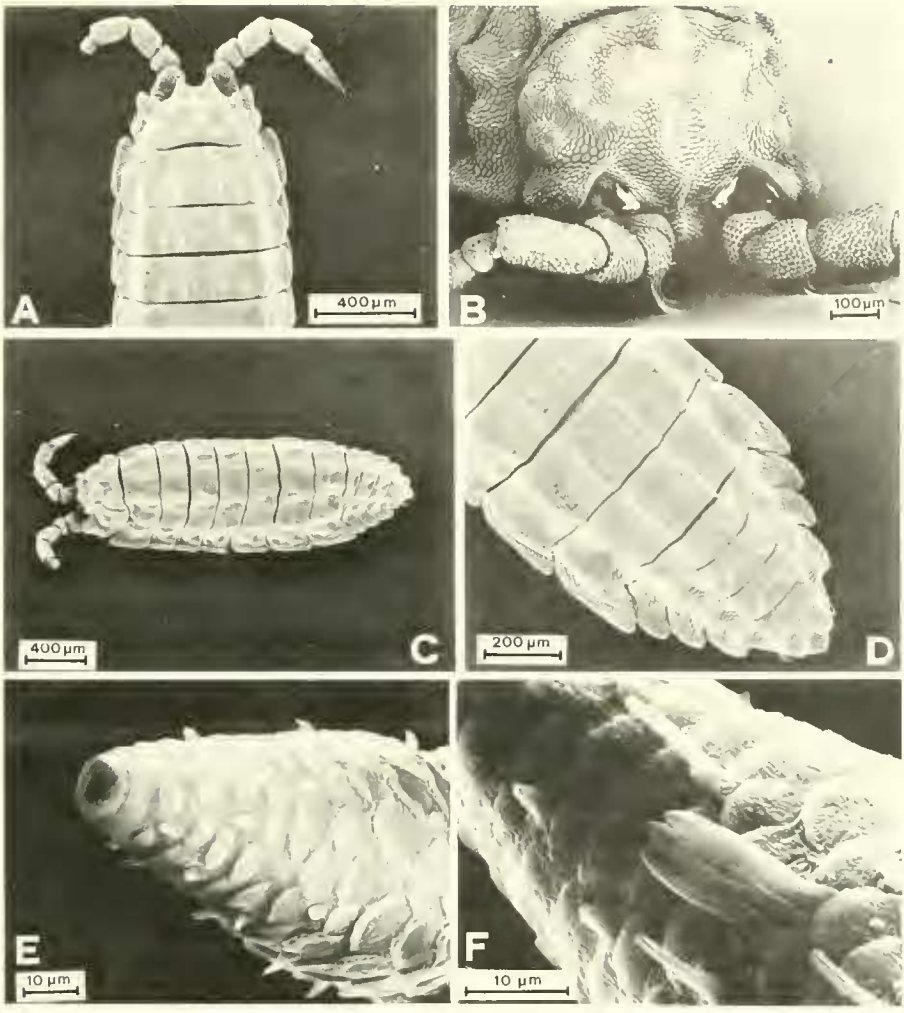

Fig. 3. *Metastenoniscus neotropicalis* n. sp. Female: A dorsal view, B head frontal view, C lateral view, D pleon and telson, E and F second antennal flagellum article from dorsal and ventral views.

Vandel 1962) in Florida Cays, Tavernier Creek, on rocky beach: in the soil, under *Posidonia* and on coconut drift in the beach, M. G. Paoletti, October 26, 1987. This latter observation is interesting. Under the *Posidonia* drift in the same location was collected one female of *Buchnerillo litoralis* Verhoeff, 1943, which represents a first record for the Neotropical region (Schultz and Johnson 1984), and *Vandeloscia culebre* (Moore, 1901), *Tylos niveus* Budde-Lund, and *Armadilloniscus ellipticus* (Harger, 1878).

Oniscoidea

Scyphacidae

Armadilloniscus caraibicus n. sp.

Type locality. Coralline cays (Cayos) of Parque Morrocoy, estado Falcon, Venezuela: Cayo Sombrero, one gravid female 31.XII.1985; Cayo Cico, 8 males, 16 females, 7 gravid females, 3.I.1986 were collected by M. G. Paoletti. Isopods were collected in the intertidal zone under coralline rocks lying on the sandy beach at Cayo Cico; at Cayo Sombrero the gravid female was

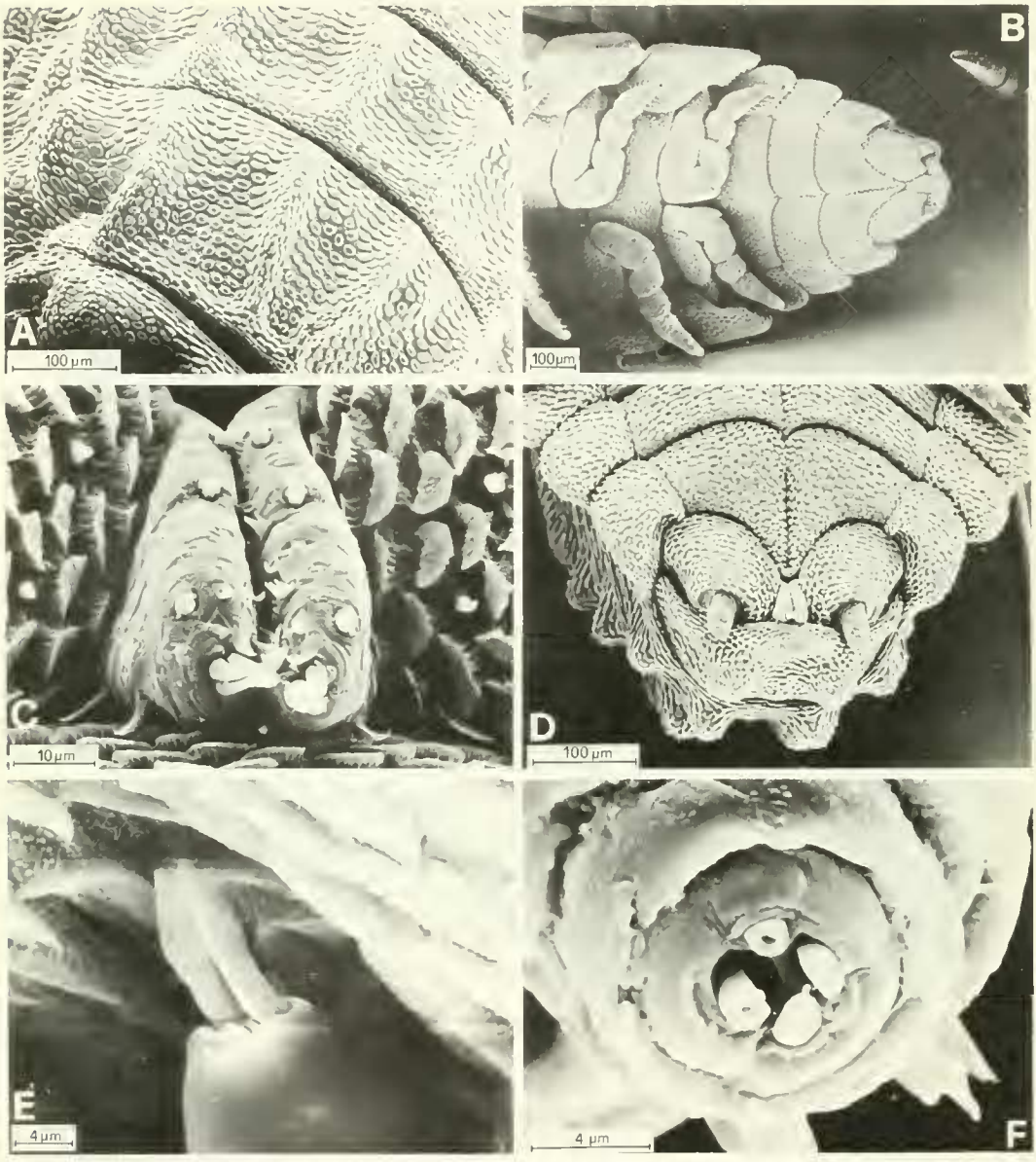

Fig. 4. *Metastenoniscus neotropicalis* n. sp. Female: A I and II pereonites, B ventral view of hind pereon, pleon and uropods, C uropodal endopods, D below view of pleon and uropods, E second article of antennulae with aesthetascs, F uropodal exopod.

found among small woody debris on the coarse sandy beach (Paoletti 1988).

Male holotype, allotype and paratypes are located in M. G. Paoletti collection; 3 female paratypes are deposited in the Museo Zoologico of the Padova University; 3 female paratypes are deposited in the general-collection of Instituto Museo de Zoologia Agricola, Universitad Central de Venezuela, Maracay, Aragua, Venezuela.

Diagnosis. Body elliptical, dull brown, covered with prominent ridges of tubercles on the head, forming ribs on the pereon and pleon (Figs. 10, 11). Ornamentation consists of circular plaques (Figs. 11F, H) and digitiform trichomes.

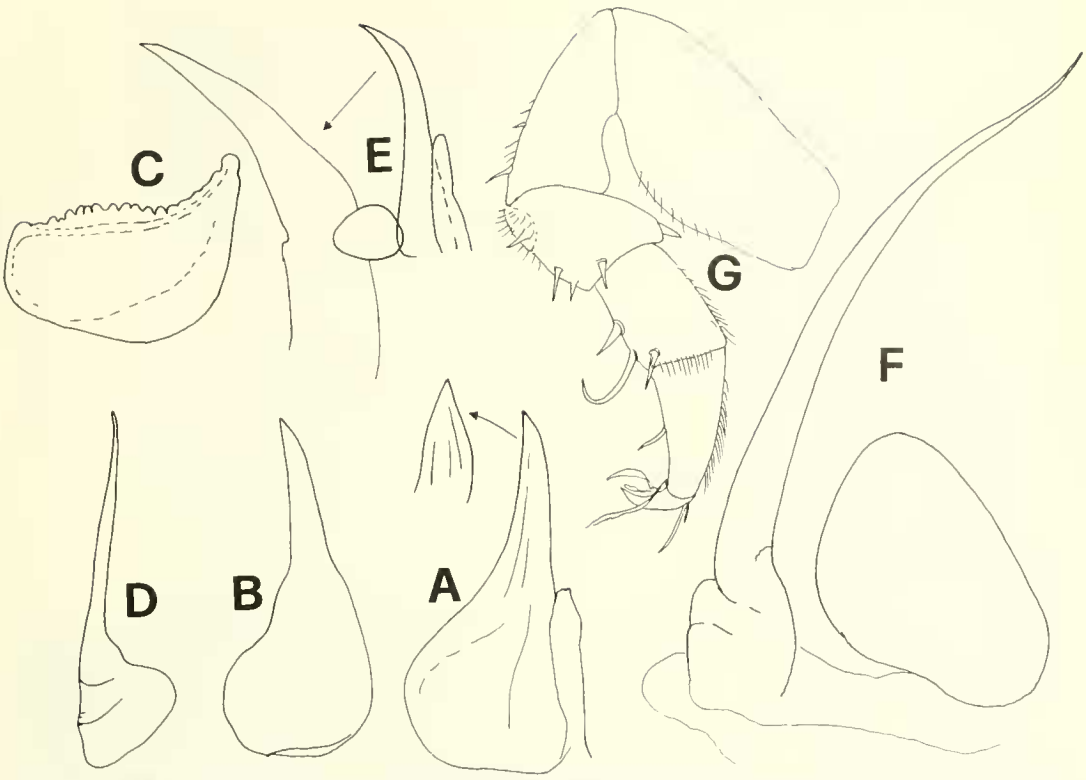

Fig. 5. *Metastenoniscus neotropicalis* n. sp. Male, A and B pleopod I endopods, C pleopods I exopod, D pleopods II endopod. *Armadilloniscus caraibicus* n. sp. Male, E pleopods I, F pleopods II, G VII male pereopods.

Dimensions: length males: 1.92–2.46 mm, mean 2.27; width males: 0.84–1.26 mm, mean 1.05 (Fig. 6); length non gravid females: 1.25–3.9 mm, mean 2.34; width non gravid females: 0.75–1.92 mm, mean 1.095 (Fig. 7); length gravid females: 2.85–3.36 mm, mean 3.0; width gravid females: 1.35–1.56 mm, mean 1.44 (Fig. 8); 6–9 pulli per gravid female were counted (Fig. 9).

Head: with lateral lobes truncated at tip and median lobe pointed, with three main tubercles in the posterior and two in the

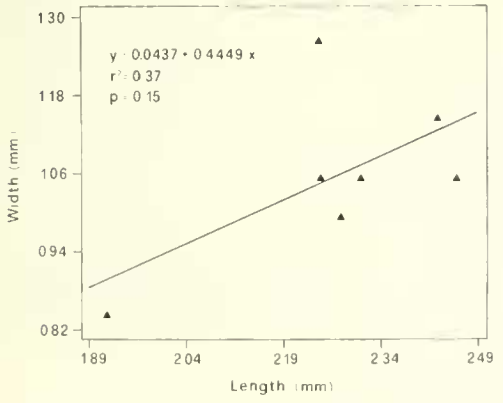

Fig. 6. *Armadilloniscus caraibicus* n. sp. Regression of male dimensions.

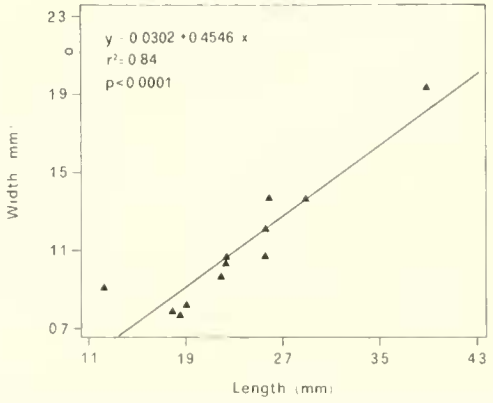

Fig. 7. *Armadilloniscus caraibicus* n. sp. Regression of non gravid female dimensions.

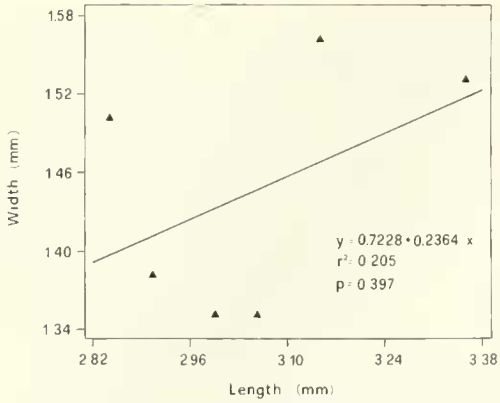

Fig. 8. *Armadilloniscus caraibicus* n. sp. Regression of gravid female dimensions.

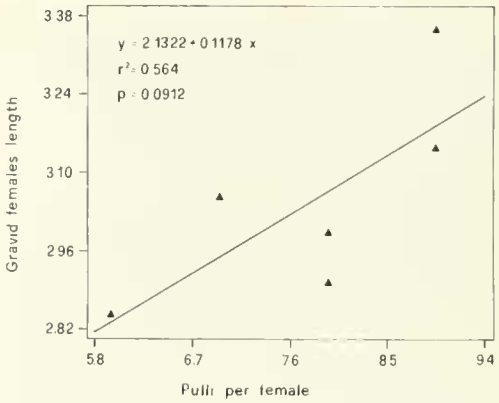

Fig. 9. *Armadilloniscus caraibicus* n. sp. Regression of gravid female length and pulli per female.

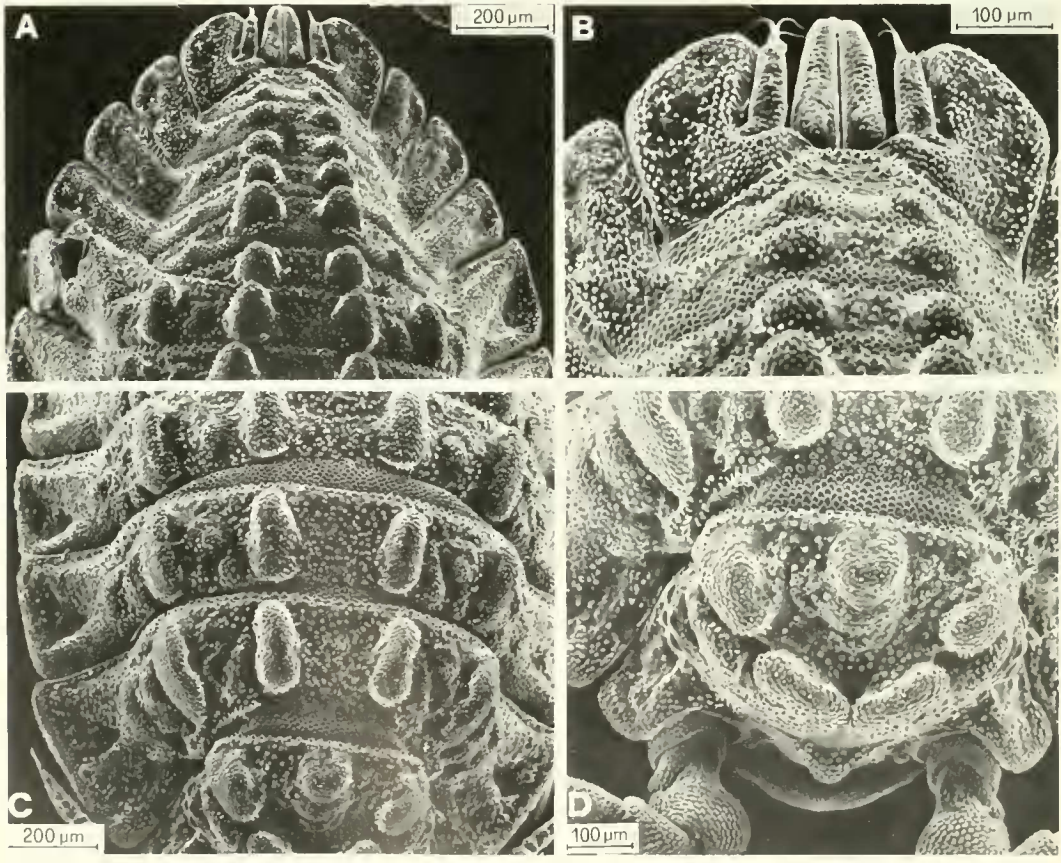

Fig. 10. *Armadilloniscus caraibicus* n. sp. Female: A and B pleon; C and D head and pereon.

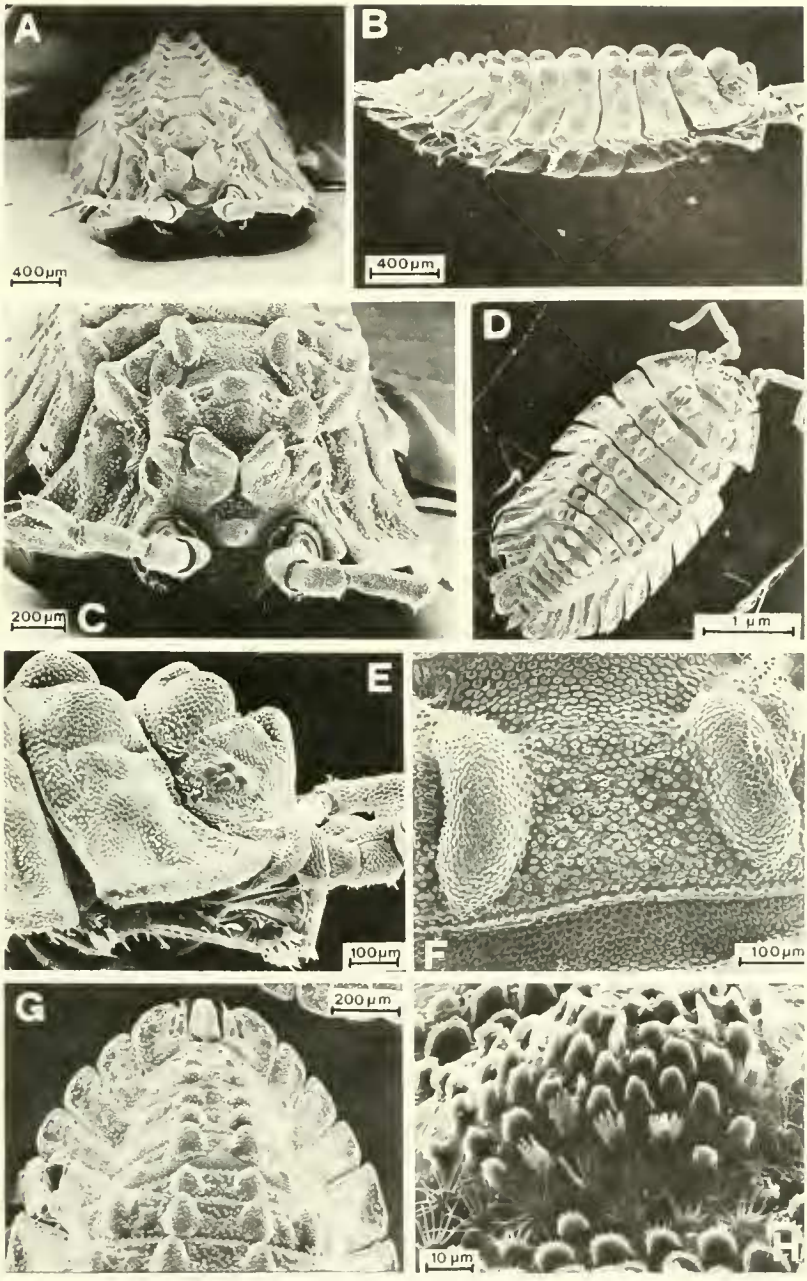

Fig. 11. *Armadilloniscus caraibicus* n. sp. Female: A–D body surface in different perspectives; E head; F pereonite ornamentation; G and H pleon and peculiar tubercle ornamentation.

anterior part (Figs. 10C, D, 11A, C, D, E). Eye with 4–5 visible ommatidia; antenna, without enlargements, holds four flagellar articles, the second with three and the third with two aesthetases on the inferior surface (Figs. 12C, D); antennule characteristically three-articulated and apically bifurcated; it bears aesthetases (5 on specimens examined) (Figs. 12A, B).

Body ornamentation: pereon with four

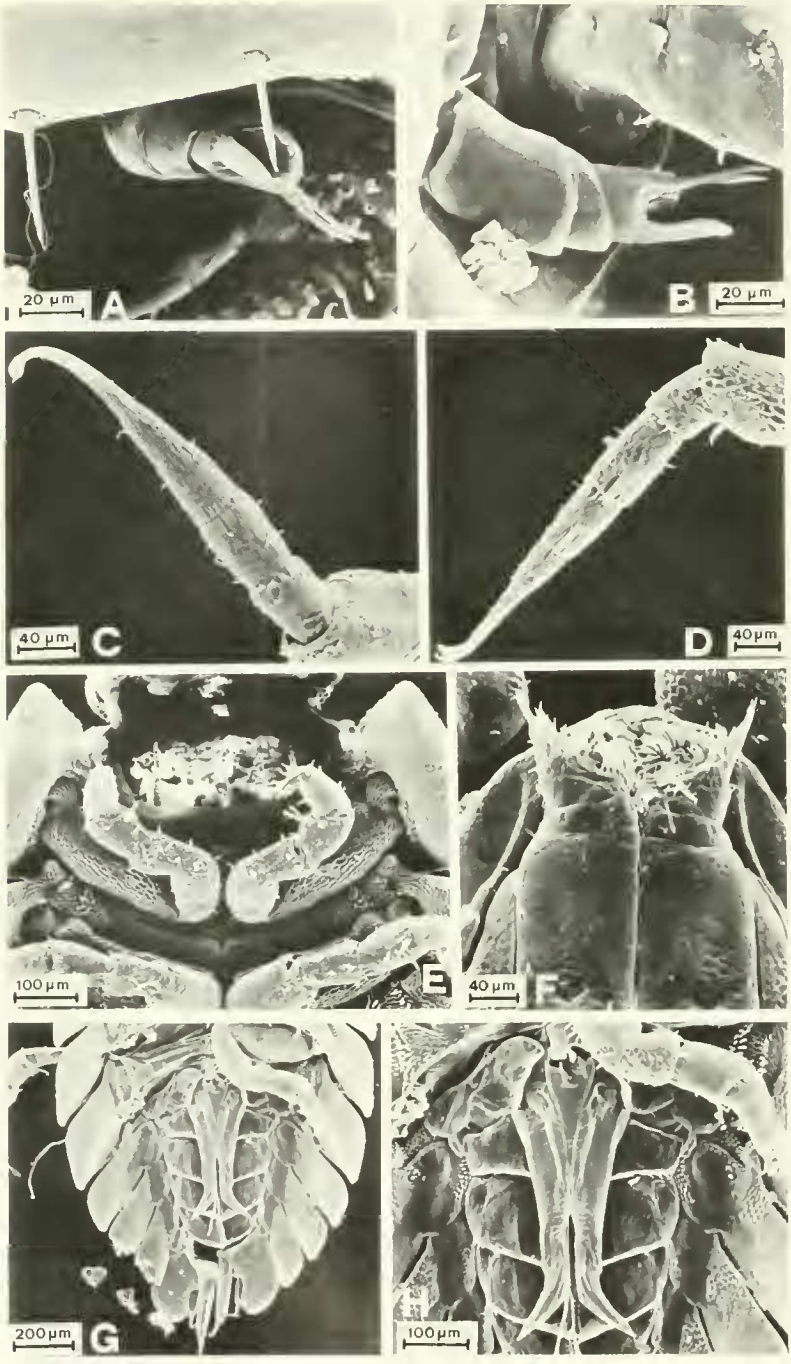

Fig. 12. *Armadilloniscus caraibicus* n. sp. Female A–F. Male G and H. A and B antennules; C and D antennal four-article flagellum in dorsal and ventral view; E forelegs; F maxillipeds; G and H male pleopods I.

main medial ridges and four shallow lateral ridges of tubercles (Figs. 10C, 11A–E); pleon supporting two main ridges of tubercles (Figs. 10A, B; 11B, D, G).

Uropods: endopod somewhat longer than basis, holding a distal spike of 3–4 aesthetascs (Figs. 10B, 11G). Male pereopods I and VII slightly modified (Fig. 5G). Pleopods: male pleopods vary little from other members of the genus (Figs. 5E–F).

Affinities. The development of tubercle ribs on the head, pereon and pleon are the features of *Armadilloniscus caraibicus* n. sp. by which it can easily be differentiated from other species (Arcangeli 1957, Schultz 1972, 1977, Garthwaite et al. 1985). From the more tuberculated *A. coronacapitalis* Menzies, this new species is distinguishable for its smaller size, less tuberculation, differing sculpture on the head, the shape of pleopod I endopod, antennae, and antennules. It can be separated from *Armadilloniscus quadricornis* Vandel, 1971, 1973 by different head structure and ornamentation and by its smaller size.

Habitat. The specimens were found under coralline rocks on the sandy beach in the intertidal zone. Only one specimen was found between woody debris on the beach. The intertidal habitat seems to be the preferred habitat of the genus *Armadilloniscus*.

Distribution and Discussion. *Armadilloniscus caraibicus* n. sp. was found on coralline cays (cayos) of Parque Morrocoy, Venezuela which extends southward in the Neotropical region the distribution of *Armadilloniscus*. A revision of the described species and of Scyphacidae genera is needed to have a better taxonomic and zoogeographic understanding of the group. At present little is known about the phylogenetic relationships of the Scyphacidae and other neotropical isopods.

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